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| EXAMINER NICKERSON, JEFFREY L. | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/517,448

Applicant(s)

PEDERSEN ET AL.

Examiner

JEFFREY NICKERSON

Art Unit

4117

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 09 December 2004.
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This communication is in response to Application No. 10/517,448 filed nationally on 09 December 2004 and internationally on 13 June 2002.
2. The preliminary amendment filed 12/09/04 which cancels claims 1-19 and adds claims 20-38 is hereby acknowledged. Claims 20-38 have been examined.

Drawings

3. Color photographs and color drawings are not accepted unless a petition filed under 37 CFR 1.84(a)(2) is granted. Any such petition must be accompanied by the appropriate fee set forth in 37 CFR 1.17(h), three sets of color drawings or color photographs, as appropriate, and, unless already present, an amendment to include the following language as the first paragraph of the brief description of the drawings section of the specification:

The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

Color photographs will be accepted if the conditions for accepting color drawings and black and white photographs have been satisfied. See 37 CFR 1.84(b)(2).

4. The drawings are objected to because the applicant refers to a color distinction regarding Figure 4 in the specification (pg 11, lines 8-15). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should

include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities: incorrect spelling or grammar. Page 4, line 23 of the applicant submitted specification contains the word "carriers", when it should be --carries--. Page 11, line 30 contains the word "available", when it should be --available--. Appropriate correction is required.

Claim Objections

6. Claims 20-23, 29-32, and 38 are objected to due to an issue with antecedent basis.

Claims 20, 29, and 38 recite the limitations "the traffic load", "the total cell load", and "the availability of channelization codes" in lines 4 and 5. There is insufficient antecedent basis for this limitation in the claim. Correction is required.

Claims 20, 29, and 38 recite the limitations "root spreading factor" and "power" in line 11 of the claims. These limitations do not specify as to which channel they are in regards to and it should be explicitly stated. For purposes of further examination the examiner will assume the "root spreading factor" and "power" are in regards to the previously mentioned downlink channel in a communications network, that is, "a root spreading factor for the downlink channel" and "the power for the downlink channel". Correction is required.

Claims 21 and 30 recite the limitation "the reserved power" in line 4 of the claims. There is insufficient antecedent basis for this limitation in the claim. For purposes of further examination the examiner will treat this limitation to be "the power for the downlink channel". Correction is required.

Claims 21-23 and 30-32 recite the limitation "A representing an activity factor of the downlink channel". There is a difference in antecedent basis for the definition of variable "A". In the parent independent claims "A" is defined as the relative activity factor of a physical shared downlink channel, but then "A" is redefined in these dependent claims as being an activity factor for the downlink channel. The applicant

Art Unit: 4117

should use different variables if they wish to use varying degrees of scope. For purposes of further examination the examiner will read the limitation to be that of the parent independent and be "A representing a relative activity factor of the PDSCH". Correction is required.

Claims 21, 22, 30 and 31 recite the limitation "PtxDSCHest the estimated power of the downlink channel" in line 6. There is insufficient antecedent basis for this limitation in the claim. Correction is required. For purposes of further examination the examiner will treat this limitation to be "PtxDSCHest an estimated power of the downlink channel". Correction is required.

7. Claims 21-24, 28 and 30-33, and 37 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. The applicant is further limiting an optional limitation in the parent claim.

In the case of claims 21, 22, 30 and 31, the applicant is attempting to limit how the allowed power level is adjusted; however, the parent independent claim does not require the allowed power to be adjusted if the minimum allowed spreading factor is adjusted.

In the case of claims 23, 24, 32, and 33, the applicant is attempting to limit how the minimum allowed spreading factor is adjusted; however, the parent independent claim does not require the minimum allowed spreading factor to be adjusted if the allowed power is adjusted.

In the case of claims 28 and 37, the applicant is attempting to limit how the total cell load is measured; however, the parent independent claim does not require the total cell load to be measured if either the traffic load or the availability of channelization codes is measured instead.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

8. Claims 25-27 and 34-36 are objected to because of the following informalities: A method claim makes claim to a new method and lacks antecedent basis for some terminology.

Regarding claims 25 and 34, these claims contain the phrase "The method of <parent claim> wherein a method for channelization code allocation" where <parent claim> represents the parent claim's number. The wording of this preamble indicates that the applicant may be attempting to claim a new method. If this is the case, the applicant should create a new independent claim to the method, which may or may not be subject to a restriction election requirement. However, the examiner believes the applicant is attempting to state "The method of <parent claim> wherein the step for channelization code allocation comprises:". This would fix the problem regarding introducing a new method into the claim, however, it also uses the phrase "channelization code allocation" which has no antecedent basis. The parent independent claims' step which the applicant seems to be referring to is worded as "reservation of channelization codes". The applicant should keep consistent

terminology regarding step names throughout the chain of claims and the preamble should therefore read "The method of <parent claim> wherein the step for channelization code reservation comprises:". Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 20-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 20, 29, and 38, the applicant uses multiple instances of the term "and/or" when combining limitations. This creates ambiguity as to the breadth of the claims and how groupings of limitations should be combined. For purposes of further examination, the examiner will give the claims their broadest reasonable interpretation and the claims will be interpreted, with parenthesis inserted to indicate limitation separation, as follows:

A method/system/network entity for adaptive setting or reservation of:
(channelization codes) OR (power for downlink channel in a communication network),
AND
using parameters for (minimum allowed spreading factor) OR (allowed power level),
AND

Art Unit: 4117

the parameter(s) being set depending on (the traffic load) OR (the total cell load) OR (the availability of channelization codes),

AND

wherein three kinds of measurements are performed: (Average transmitted power of a physical shared downlink channel, PDSCH) AND (relative activity factor, A, of the PDSCH) AND (Weighted code blocking rate, B)

AND

adaptive adjustment of (root spreading factor) AND (power) is based on these three measurements.

Regarding claims 20, 29, and 38, these claims contain the limitation "adaptive adjustment of root spreading factor and power is based on these three measurements".

It is unclear whether the applicant is claiming:

a) the root spreading factor is based on all three measurements listed previously in the claim and the power is based on all three measurements listed previously in the claim, or

b) the root spreading factor is based on a first subset of the three measurements listed previously in the claim and the power is based on a second subset of the three measurements listed previously in the claim, and therefore together, the root spreading factor and power are adjusted based on the union of the first subset and the second subset, thereby creating the group of three measurements.

Regarding claims 21-28 and 30-37, these claims inherit the ambiguity from their parent independent claim.

Regarding claims 23 and 32, these claims contain the phrase "then decrease SFmin (allow higher bit rates)" in lines 3-4. It is unclear whether the applicant is attempting to claim the causal effect of allowing higher bit rates as a result of decreasing the minimum allowed Spreading Factor or whether the applicant is just clarifying the effect. Given its inherent nature, the examiner will interpret the language in the parenthesis to be just a clarification of the effects. However, the language in the parenthesis should be removed and correction is required.

Regarding claims 24 and 33, these claims contain the phrase "then increase SFmin (maximum bit rate is decreased)" in lines 3-4. It is unclear whether the applicant is attempting to claim the causal effect of decreasing the maximum bit rate as a result of increasing the minimum allowed Spreading Factor or whether the applicant is just clarifying the effect. Given its inherent nature, the examiner will interpret the language in the parenthesis to be just a clarification of the effects. However, the language in the parenthesis should be removed and correction is required.

Regarding claim 26 and 35, these claims contain the phrases "codes for downlink basically are assigned" and "assigned to users primarily" which renders the bounds of the limitations indefinite. Either the codes for downlink are assigned in the code tree

starting from a certain limb of the code tree or they are not. They can not be "basically assigned" which covers both instances and renders the limitation as not further limiting. The same applies to codes for users and being "primarily" assigned to a second limb of the code tree. Either the codes for users are assigned to a second limb of the code tree or are not. They can not be "primarily" assigned as it covers both the instance when the codes for users are assigned to the certain limb and the instance when the codes for users are assigned to said another limb.

Regarding claims 27 and 36, the phrase "e.g." (Latin exempli gratia, translated into "for example") renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). For purposes of further examination the examiner will treat the example as non-limiting.

Allowable Subject Matter

11. Claims 20-38 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph as set forth in this Office action, as well as any objections set forth in this Office action, and to include all of the limitations of the base claim and any intervening claims.

Regarding claims 20, 29, and 38, the applicant claims adaptive adjustment of both the root spreading factor and power based on three kinds of measurements. The prior art discloses adaptive adjustment of the root spreading factor based on various

Art Unit: 4117

factors and adaptive adjustment of the power based on various factors. The prior art does not disclose adaptive adjustment of the root spreading factor based on the three defined measurements and adaptive adjustment of the power based on the three defined measurements (case a in the 35 USC 112 rejection above), though it does disclose adaptive adjust of both based on subcombinations of the three defined measurements (case b in the 35 USC 112 rejection above, depending on the subsets).

Examiner Note: The prior art discloses all limitations in the independent claims except for the limitation(s) discussed directly above in this subsection.

Cited Pertinent Prior Art

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Bark et al (US 2002/0160781) discloses a system and method for efficient allocation of resources for a downlink channel that compares power and link quality to thresholds to adjust whether the user is using a DDCH or a DSCH.

b. Butovitsch et al (WO 1999/52226) discloses a system for downlink power control based off SIR and power transmit commands from the user.

c. Chheda (US 2003/0231586 A1) discloses a system and method for maximizing capacity in a CDMA network by selecting a protocol and code rate to start new user sessions based on power usage and code usage thresholds.

d. Dahlman et al (US 2002/0010001) discloses a method and arrangement for adaptive adjustment of the modulation and coding scheme on a power-controlled downlink channel based on the power use of a DPCH.

e. Hamalainen et al (US 2003/0043774 A1) discloses a method for dynamic reselection of CDMA spreading codes based on diminished orthogonality between the already allocated codes caused by transmission delays.

f. Hamalainen (US 7,027,420 B2) discloses a method for determining whether to perform link adaptation (specifically only adjusting MCS) based on several channel quality measurements, such as SIR or BLER.

g. Magnusson et al (US 6,163,524) discloses a method for code allocation in a CDMA network based on availability of codes.

h. Parkvall et al (US 6,542,736 B1) discloses a method for link adaptation in a telecommunications network that adjusts data rates.

i. Sundelin et al (US 6,144,861) discloses a method for downlink power adaptation in a network based off SIR.

j. Wang et al (US 2003/0123382 A1) discloses a system for adaptively adjusting the spreading factor based on uplink power.

k. Willenegger (US 2002/0009061 A1) discloses a system for downlink power control based on uplink power control feedback.

l. 3GPP (TR 25.922 v5.0.0 March 2002) discloses radio resource management strategies in a UMTS network utilizing uplink and downlink power adaptation and dynamic code allocation.

m. 3GPP (TS 25.223, v5.0.0, March 2002) discloses spreading and modulation for TDD UMTS networks and discloses adjusting spreading factors based on codes.

n. 3GPP (TS 25.225, v5.0.0, March 2002) discloses physical layer measurements for TDD UMTS networks and specifies what variables should be measured in those networks.

o. Sung et al ("A Quality-Based Fixed-Step Power Control Algorithm with Adaptive Target Threshold", July 200) discloses how to adjust power control based on SIR and BER requirements.

p. Hedlund et al (WO 2001/39540 A1) discloses a method to reject user requests for downlink power increases based on estimating total needed power.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Nickerson whose telephone number is 571-270-3631. The examiner can normally be reached on M-Th, 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beatriz Prieto can be reached on 571-272-3902. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J.N./
Jeffrey Nickerson
Patent Examiner

/Prieto, Beatriz/

Supervisory Patent Examiner, Art Unit 4117